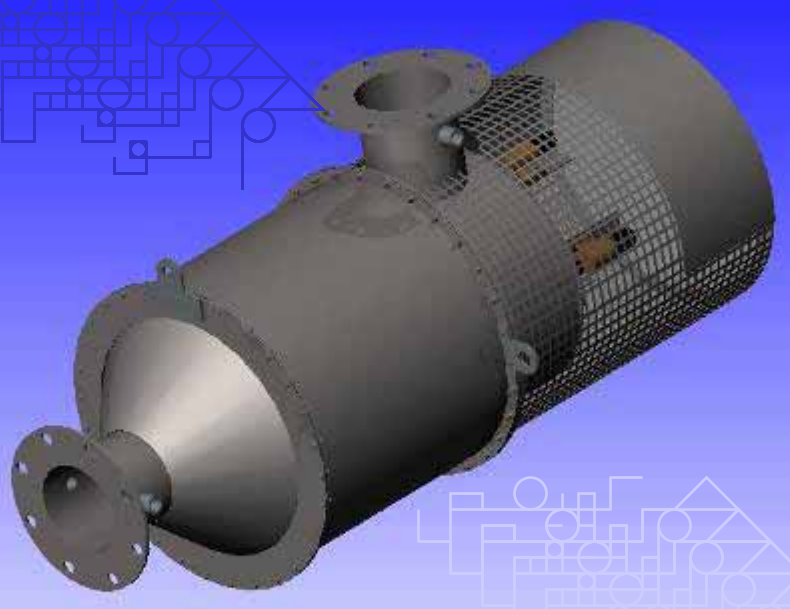
RYPOS

Active Diesel Emission Control Systems



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The Company

RYPOS Inc., a privately owned company founded in 1997, is engaged in research and development to design and construct an active exhaust emission control system for the reduction of harmful emissions from Diesel engines.

Company History

2000 | 2001 | 2002 | 2003 | 2004

8 Dunham Street, Attleboro, MA
820 Wellington Ave., Cranston, RI

Basic research and proof of concept
First prototype on pickup truck
Second prototype on a 150kW Genset

3 Industrial Park Road, Medway, MA

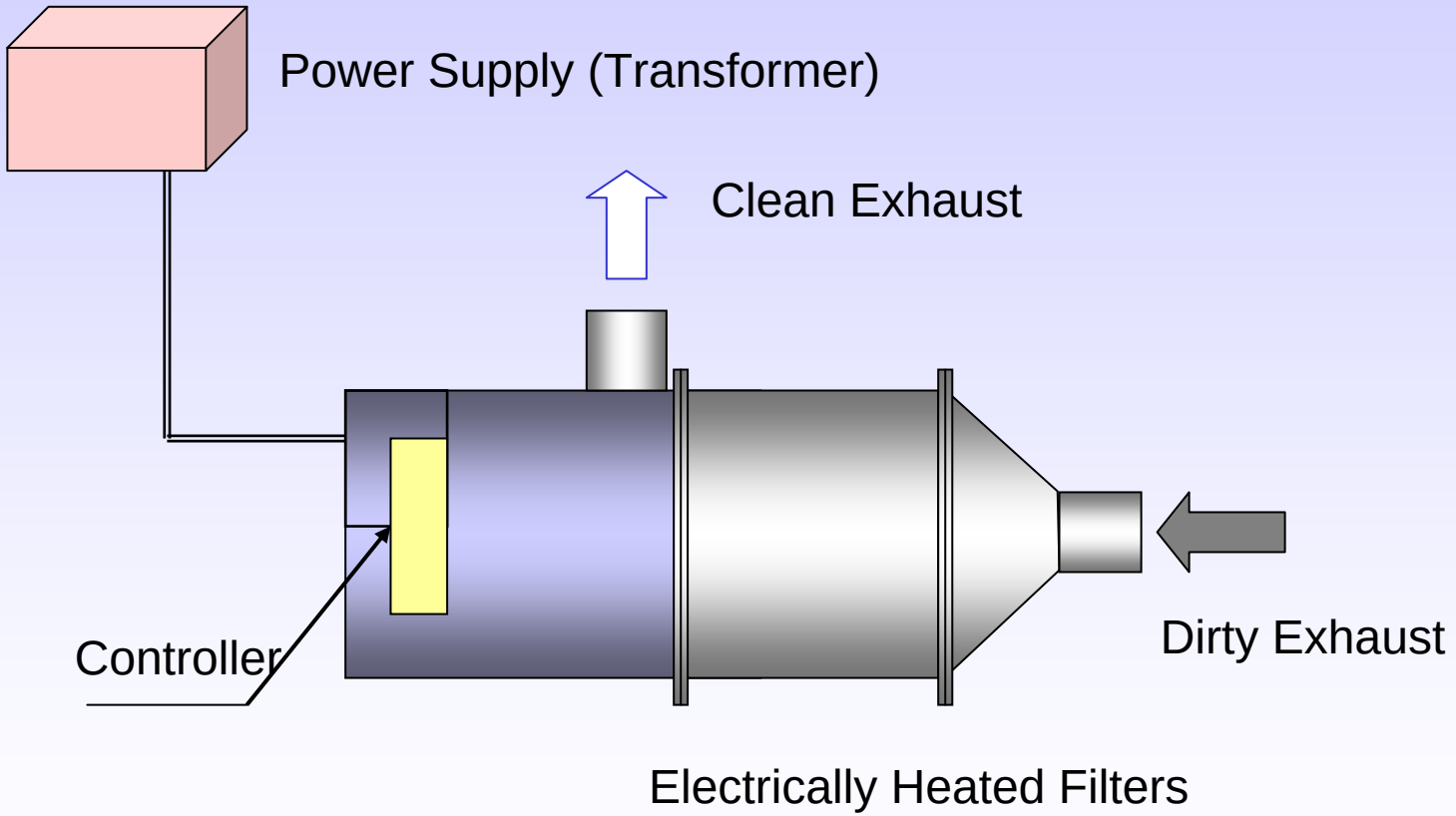
Product development
Third generation
Test at Environment Canada
First field test program

3 Industrial Park Road, Medway, MA

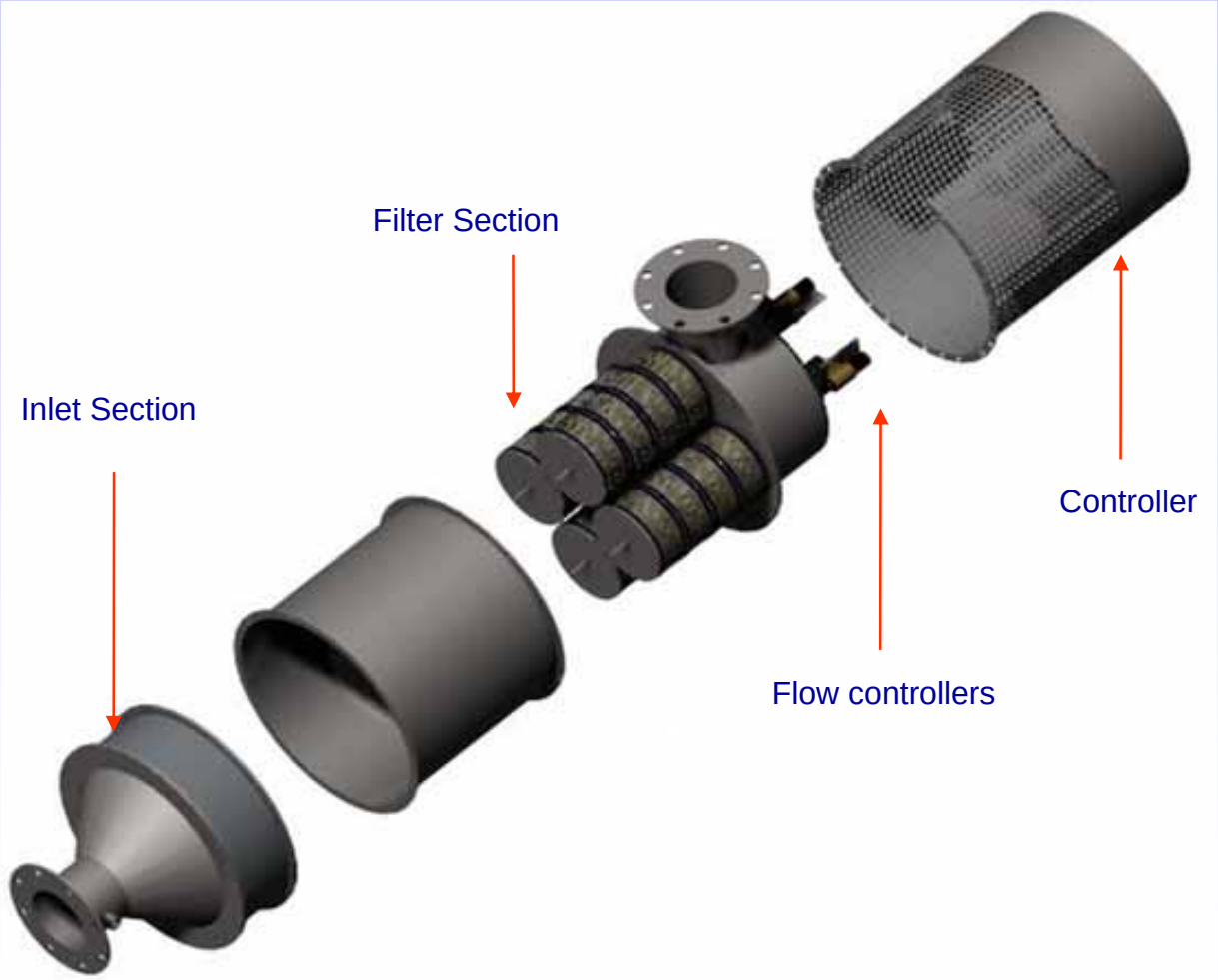
Product development
Forth Generation
Second field test program

Applications
- Diesel generators
- Large engines
- Marine generators

The Product

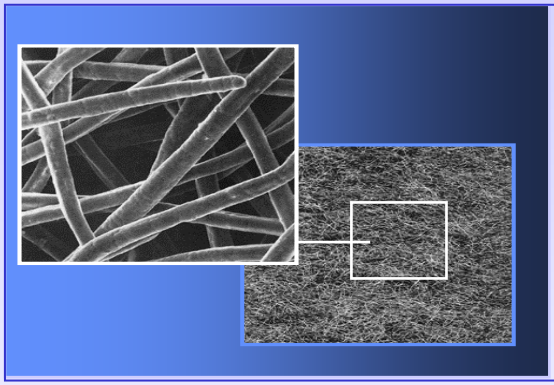

Power Supply (Transformer)
Clean Exhaust
Controller
Dirty Exhaust
Electrically Heated Filters

The Product


Filter Section
Inlet Section
Controller
Flow controllers

The Product

Active Filter Design



- o Electro conductive
- o High porosity
- o Low back pressure
- o Withstands high temperatures
- o Heats up fast (low thermal mass)
- o High filter efficiency

Electrical Control System

The operation of the RYPOS Trap is controlled by a microprocessor.

The controller monitors the trap and periodically, as required, an electric current is passed through a filter element, which then acts as a heating element.

- Automatic regeneration cycles
- Timing sequence, duty cycle, flow control and filter unit selection
- Pressure sensing is used to initiate regeneration cycles
- Electronic switching of high current to filter elements (automatic)
- Monitoring and remote display

Demonstration Projects

Falcon Steel, Newark, Delaware

CumminsVTA28-G1

567kW (760 hp)

2RT16

Southworth-Milton, Warner, NH

CAT 3406

350kW

RT24

UNC Health Science Library, Chapel Hill, NC

Perkins D150P4

150kW

RT8

NAVSEA-Philadelphia

DDC12V-71N

434 hp

RT32-2C

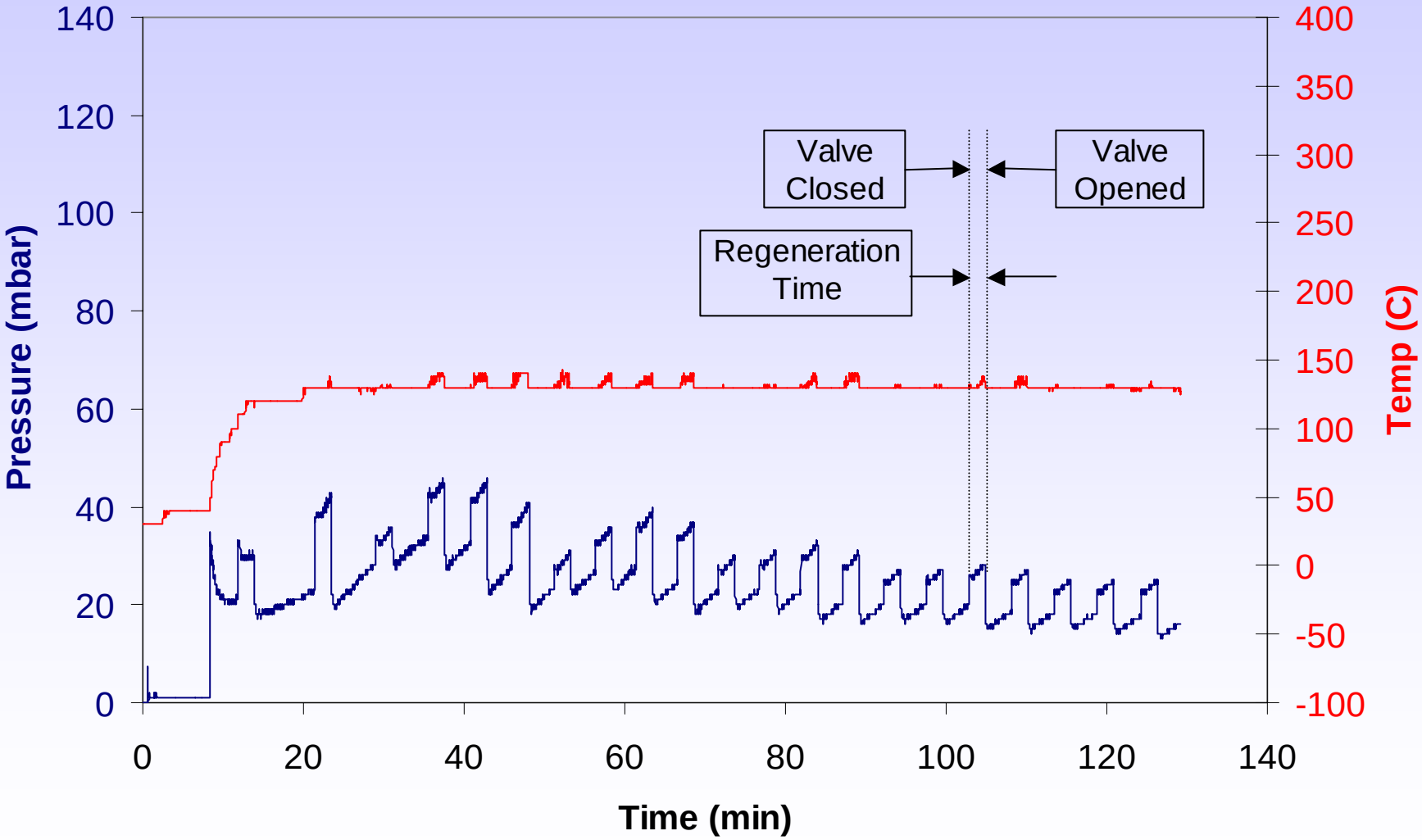
RYPOS Testing

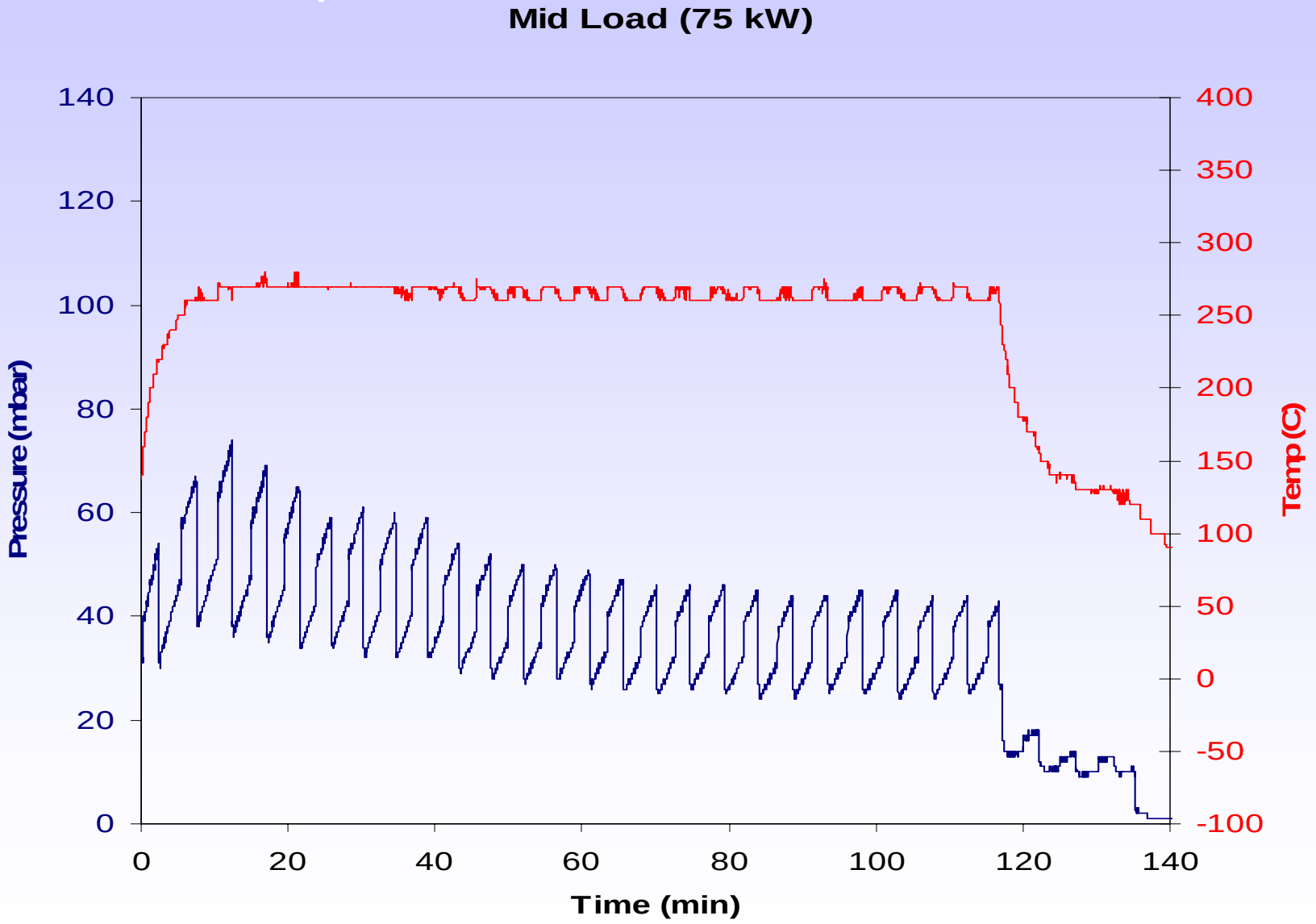
Komatsu
SA6D108E-2

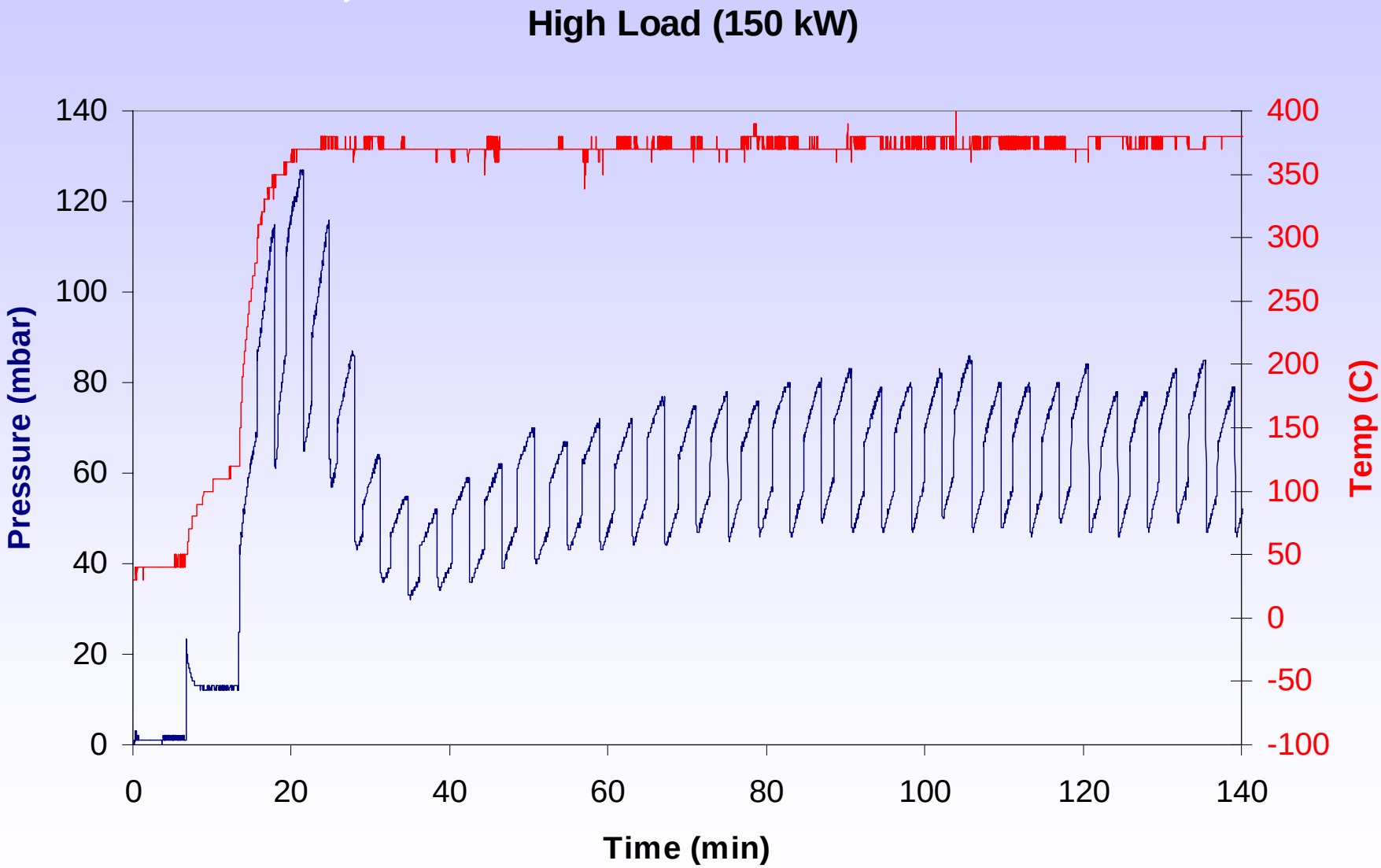
180kW

RT08

No Load


Pressure (mbar)
Temp (C)
Time (min)
Valve Closed
Valve Opened
Regeneration Time
0
20
40
60
80
100
120
140
-100
-50
0
50
100
150
200
250
300
350
400


Mid Load (75 kW)
Pressure (mbar)
Temp (C)
Time (min)
0
20
40
60
80
100
120
140
400
350
300
250
200
150
100
50
0
-50
-100


High Load (150 kW)
Pressure (mbar)
Temp (C)
Time (min)
0
20
40
60
80
100
120
140
400
350
300
250
200
150
100
50
0
-50
-100

Conclusions

- Reliable regeneration independent of exhaust temperature
- Consistency in maintaining low engine back pressure
- High Performance, up to 90% of soot.
- Low energy consumption.